



ESP CLUSTER NEWS

A Newsletter published by the Environmental Science and Policy Cluster

Spring 1999

The Environmental Science and Policy Cluster (ESPC) was established in 1996 to promote multi-disciplinary education and research in environmental science and environmental policy. In the following you will read about the Cluster's mission and goals and some of the projects it has been involved in working to fulfill those goals.

ESPC Cluster Mission Statement

To promote multi-disciplinary education and research in environmental science and policy. The Cluster endeavors to enhance the educational experiences and resources of academic units involved in environmental science and environmental policy education by: (1) building upon the strengths of existing programs to create or enhance opportunities for collaboration among students and faculty; (2) providing a base for long-term teaching and research conducted within the context of modern environmental science and policy analysis; and (3) serving as the focal point and intellectual bridge for the College's environmental programs.

Goals and Objectives

- ❖ Provide a more integrated educational experience for future environmental scientists and policy makers—an educational experience that produces well-trained scientists who grasp the economic, political and social considerations that impact environmental policy, and informed policymakers who understand the science of environmental policy.
- ❖ Improve the availability of educational facilities and experiences that support environmental education and research.
- ❖ Encourage the development and implementation of the technologically sophisticated approach to environmental education and research needed in the twenty-first century.

- ❖ Promote educational outreach and public service activities that strengthen ties between the College and the local community, the Commonwealth, and the nation.

ESP SUMMER RESEARCH PROGRAM

In June 1998 the Cluster inaugurated its Environmental Science and Policy Summer Research Program for Undergraduates. Created to provide research opportunities for undergraduates interested in environmental studies, the program provides recipients with a stipend, a research expense budget, and free housing in exchange for ten weeks of faculty supervised research. Last summer the Cluster awarded seven summer research fellowships to rising juniors and seniors selected through a competitive process. The students' research projects involved a wide range of environmentally related topics. Their topics included: developing a microwave-assisted method for extracting lipids from sediment and particles; studying amphipods as bioindicators; examining the effects of naturally-occurring organic material, humic acids, on the behavior, availability and toxic effects of organophosphate pesticides; examining the role of grazer species in trophic transfer; researching the interaction of polydentate ligands with Hg(II) to provide a foundation for further understanding the bioavailability and abiotic reduction of Hg(II) in aquatic environments; researching the sediment toxicity in tidal creeks of the Eastern Shore, and analyzing the impact of laws, policies and practices on wetlands protection in a Virginia locality.

Five students will be conducting research in the summer of 1999. Their topics are: "Improved Methods for the Determination of Trihalo-methanes in Drinking Water"; "Commercial

Expansion in Rural York County: Its Effects on Waller Mill Reservoir"; "The Stratigraphy, Structure and Hydrogeology of Bieta Giyorgis, near Axum, Ethiopia"; "Study of Nitrogen Cycling with the Sea Education Association (Woods Hole, MA): Regeneration of NH₄⁺ by Zooplankton in the North Atlantic Ocean"; and "Analysis of Chlorothalonil and its Degradation Products in Retention Ponds on the Eastern Shore of Virginia."

PROGRESS MADE ON LAKE MATOAKA FIELD LAB

In December 1997 the W.M. Keck Foundation awarded The College of William and Mary a challenge grant to construct an environmental field laboratory. The College has made significant progress in implementing the grant. In late 1997 the College selected the architect and engineering firm of Wiley & Wilson to work under the guidance of the College's Capital Outlay Department to design the facility. The firm has extensive experience in designing scientific laboratories and has architects, engineers, planners, and environmental professionals working for it.

The 5500 square foot facility will be located in the Lake Matoaka watershed near the Botetourt Residence Complex. The field lab will feature a teaching lab, wet lab, dry lab, computer lab and an office/conference room area. Once the lab is opened, it will provide a central facility for environmental science research and will enable students to conduct field experiments more effectively.

The State Architectural Review Board approved the field lab architectural plans on January 8, 1999. Construction on the Field Lab is expected to begin in June 1999, and will last for one year.

FIRST CANON VISITING SCHOLAR VISITS WILLIAM & MARY

In 1997 Canon Virginia funded a visiting scholars program to be administered by the Environmental Science and Policy Cluster. The program is designed to promote environmental education at the College by providing students and faculty with opportunities to interact with noted experts in

environmentally related fields. On November 17-18, 1998, **Dr. Mario Molina, Institute Professor at the Massachusetts Institute of Technology**, visited the College as the first Canon Visiting Scholar. Dr. Molina is an environmental chemist who has studied the effect of chlorofluorocarbons on the ozone layer in the atmosphere. In 1995, the Swedish Academy of Sciences presented the Nobel Prize to Dr. Molina, F. Sherwood Rowland of the University of California at Irvine, and Paul Crutzen of the Max Planck Institute for Chemistry in Germany for their work on CFCs and the depletion of the ozone layer. During his visit, Dr. Molina addressed a full house in the Commonwealth Auditorium, visited an environmental policy class and gave a technical lecture to the faculty and students of the Chemistry Department. Dr. Molina also met with a group of Monroe Scholars and was honored at a dinner hosted by the Provost.

COLLEGE SUBMITS NSF IGERT PREPROPOSAL

The Cluster worked with a group of faculty and administrators from Arts and Sciences and the Schools of Business, Law, and Marine Science to submit a preproposal to the National Science Foundation under the Integrated Graduate Education Research and Training program. The proposal outlines a program that would build upon the existing Resource Management and Policy Ph.D. program in the School of Marine Science by providing more integrated science training. Students would be able to enhance their traditional Ph.D. science education with courses that promote a better interdisciplinary understanding of environmental problems. Students would have the opportunity to gain certification in business, law or policy. The Cluster would administer the program. Full proposal invitations will be announced this summer.

COASTAL SCIENCE COURSE FOR LAW & BUSINESS STUDENTS

In December 1997, the Cluster Director, Lynda Butler, and Assistant Director, Britt Anderson, began working with David Niebuhr of the

Chesapeake Bay National Estuarine Research Reserve System at VIMS and Don Rahtz, a Professor of Business, to evaluate the need for an educational program on coastal ecosystem science for graduate students in law and business. Funded by the National Oceanic and Atmospheric Association (NOAA), the project included a literature review based on standard methodologies and surveys of law students and professors, practicing environmental attorneys, business students, and environmental business professionals. The surveys were designed to assess the potential need for an environmental science program for law and business students interested in a career in environmental law or business. The responses to the law surveys indicated that such a program is needed and would advance the educational and professional goals of law students. In the coming year, a specific program will be developed and tested in a variety of educational forums. The core group is seeking additional external funding to further test the program on a nationwide basis.

CLUSTER PROMOTES ENVIRONMENTAL JUSTICE WORKSHOP

In May 1998, Cluster personnel Lynda Butler and Britt Anderson participated in a two week May Seminar, "Environmental Justice: Protecting the Environment, Citizens and Cultures" sponsored by The Charles Center. Led by Mark Fowler, Dean, Undergraduate Studies, the purpose of the seminar was to review environmental justice materials, determine which materials should be used for an undergraduate seminar, and outline a program for a two-day workshop. In addition to the Cluster personnel, Ed Cowell, Director of the Office of Multicultural Affairs; Dwight Furrow, Philosophy; Jon Kerner, Sociology; Curt Moyer, Anthropology; Hans Tiefel, Religion; Tamara Goodale, law student, and Nahla Durrani, undergraduate student, participated in the workshop.

The two-day public workshop was held on February 19 & 20, 1999. In conjunction with the symposium, a six-week, one-credit seminar was offered to undergraduate students. Featured speakers for the symposium included Julian Bond, Lois Gibbs, Bunyan Bryant, James Ely and

Mark Sagoff. Next year's symposium, *Earth Summit Dialogue: The 1992 Rio Conference on the Global Environment and Sustainability for the 21st Century*, will focus on issues of sustainable development and environmental preservation in the next century.

LAW AND SCIENCE CLINIC ESTABLISHED

In the Fall 1998 semester, the School of Law and VIMS/SMS developed an environmental law and science course for law and marine science students that was designed to provide collaborative clinical opportunities for those students. David Bookbinder, chief counsel for the American Canoe Association, is the adjunct professor teaching that course. The law students provide legal assistance on water quality and other environmental disputes, while the marine science students address technical issues.

CLUSTER FUNDS VISITING PROFESSOR FOR SECOND YEAR

In the 1998 fall semester, the Cluster brought in Dr. Arthur Andersen, Director of the Energy Demand and Integration Division, Office of Integrated Analysis and Forecasting, Energy Information Administration, Department of Energy, as a Visiting Professor of Environmental Science and Policy. Dr. Andersen taught an environmental economics course titled, "Global Warming: A Search for Environmental Policy" and "Energy/Economic Development." His appointment enabled the College to expand undergraduate offerings in economics to include an examination of complex environmental policy implications.

COLLEGE AWARDED WOODROW WILSON FELLOW

The College was awarded a Woodrow Wilson Visiting Fellow for the 1999 spring semester to enrich the activities of the Environmental Science and Policy Cluster. The fellow, **James J. Mackenzie, is a Senior Associate in the World Resource Institute's (WRI) Climate, Energy,**

and Pollution program. Dr. Mackenzie has written two books and numerous reports, articles, and papers related to air pollution, climate change, national energy security, and the impact of the automobile, nuclear power safety, global oil resources, conservation, and solar energy. Prior to joining WRI, Dr. Mackenzie served as a Senior Staff Scientist at the Union of Concerned Scientists and as a Senior Staff member for Energy at the President's Council on Environmental Quality.

Dr. Mackenzie visited the campus the week of March 14. He met with a variety of student and faculty groups including the Monroe Scholars, graduate students of the Resource Management and Policy Ph.D. program, and the Cluster Advisory Board. In addition, Dr. Mackenzie delivered several lectures to both undergraduate and graduate classes, as well as a public lecture, *Climate Change: The Long Term Challenge*, at Watermens' Hall on the VIMS/SMS campus.

CLUSTER INITIATES NEW LINKS BETWEEN MAIN CAMPUS AND VIMS/SMS

New Van Acquired - In an ongoing effort to link the main campus and VIMS/SMS, the Cluster has purchased a 15-passenger van. The van will be used to transport students to classes, lectures, research programs, and conferences held on the VIMS/SMS campus. It will also be available for environmental field trips and other special events. Persons interested in using the van for teaching or research projects related to environmental science or policy should contact Britt Anderson at the phone number and address listed below.

Developing New Technology - The Cluster Director is currently working with faculty from VIMS/SMS and the public policy program to identify the nature and type of technology needed for graduate environmental science education (e.g., GIS and remote sensing), as well as the current technological capabilities of faculty and students. Additionally, the Cluster currently is exploring options for expanding opportunities for students from the main campus to take curricular offerings at VIMS/SMS by developing a virtual reality classroom at VIMS/SMS.

ENVIRONMENTAL ACQUISITIONS MADE FOR SWEM LIBRARY

The Cluster developed and implemented a plan for acquiring library materials that promote multi-disciplinary education and research in environmental science and policy, and that otherwise address new or intensifying demands for library resources in those areas. An annual budget allocation is being used to purchase books and journal materials to be housed primarily in Swem.

CLUSTER BOARD OF ADVISORS

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The Cluster will continue to work to fulfill its mission of promoting multi-disciplinary education and research in environmental science and policy by linking the environmental programs in Arts and Sciences and the Schools of Business, Education, Law, and Marine Science.

If you have any ideas for environmental science or environmental policy projects, and would like the Cluster to assist you, please call us.

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